

Applying 7-1-7 to your Own Data activity

Dengue (pre-written scenario)

Overview

During this exercise, we will ask you to calculate timeliness metrics, identify bottlenecks and enablers, and determine actions for an outbreak event. For those not able to bring their own data, we have provided a fictional scenario of an outbreak.

The narrative is intentionally high-level. We ask you to imagine that this outbreak occurred in your country or jurisdiction. When reading through the scenario, extrapolate what the likely bottlenecks are that would lead to the delays based on your systems.

Background

Dengue is endemic throughout your province and country, and presents similarly to many other diseases including malaria, zika, and influenza. District surveillance officers are asked to notify the provincial health department if they become aware of a sudden increase in suspected dengue cases. This scenario outlines key events for a dengue outbreak in one of the country's provinces.

Scenario

On **May 3**, a district surveillance officer in your province began investigating possible diseases that could be causing an increase in fever-like patients after a friend, who is a health care worker at a local health facility, mentioned an anomaly. The district surveillance officer called all the local health facilities, many of which noted an abnormally high number of cases of high fever, headaches, vomiting, rash, retroocular pain, and abdominal pain. The district surveillance officer, who had recently undergone refresher training on dengue case management, suspected a significant increase in cases of dengue. The district surveillance officer requested the facilities conduct rapid dengue virus tests for patients presenting with fever-like symptoms.

On the evening of **May 3**, the health facilities confirmed ten cases of dengue through rapid testing and notified the district health officer. The testing was done quickly because of a recent national effort to equip health facilities with rapid tests. Your province does not have an epidemic threshold for dengue, however there has never been more than two cases in the district for the last five years during the month of May. There is no district rapid response team, so the district surveillance officer planned to ask for assistance through the provincial health department at the next provincial meeting.

Districts report on endemic diseases through weekly public health bulletins, which are aggregated and discussed every week at the provincial health department. At the next meeting on **May 8**, the outbreak was discussed and reported to the national Ministry of Health. The provincial health department authorized the mobilization of their rapid response team (RRT) to the district.

The RRT arrived on **May 10**, slightly delayed due to responding to a foodborne outbreak in a further district. That day, they initiated contact tracing of the ten confirmed cases, which revealed that all patients were connected to a local school, which had poor sanitation and anti-mosquito protection. On **May 10** the team also began collecting samples for serologic testing, and shipped those samples to the National Reference Laboratory as the province did not have a reference lab.

Contact tracing conducted by the RRTs revealed at least seven additional suspected cases of dengue going back to **April 26**, though most did not seek care.

The rapid response team completed its initial epidemiological investigation on **May 12**, and provided a line list and contact list to the provincial health department. Based on this information, the health department performed a risk assessment on the same day and assessed this event to be very high. The incident manager immediately shared the assessment recommendations with the health director, who subsequently shared it with the national Ministry of Health.

The first samples arrived at the National Reference Library on **May 13**. On **May 14** the National Reference Laboratory confirmed DEN-2 infection in all samples.

Starting **May 16**, the RRT conducted infection prevention and control (IPC) assessments at the district hospital and the affected school. Many other schools were also determined to have poor sanitation and could be sites for future dengue outbreaks. They also started dengue case management training at local health facilities.

The RRT began risk communication and community engagement activities on **May 17**, as there was confusion between whether they or the district health officer would be initiating these activities. Also on **May 17**, the Minister gave a press briefing, with a subsequent release of a national advisory on the confirmed outbreak using print and electronic media due to increased suspected cases being reported from neighboring provinces as well. Misperceptions and rumors about the outbreak began to circulate in the community, including that the outbreak was an excuse to increase local surveillance.

On **May 18**, local schools began implementing mosquito control measures including insecticide spraying, replacement/repair of mosquito screens, and removal of water-collecting containers. The provincial health department also began handing out nets to the local community.